REMARKS

Claims 1 through 8 and 10 through 13 remain pending in the present application. Claims 1, 7, 8, and 10 have been amended herein. Claim 9 has been cancelled herein. Claims 12 and 13 have been added herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Egashira, et al. (U.S. Pat. No. 5,539,418). Applicants respectfully traverse the rejection.

Claim 1 has been amended to explain that the through hole defines an imaginary body that is disposed within the through hole and that is continuous with the vehicle body. Claim 1 has been further amended to explain that the imaginary body is **interposed between the radiating element 15 and the ground plate 16**. Support for the amendment can be found on page 5, lines 6 – 13 of the application. As such, no new matter has been entered. Also, independent claims 7, 8, and 10 have been similarly amended. (Figures 1A, 3A, and 5A of the present application are reproduced below so as to illustrate the position imaginary body.)

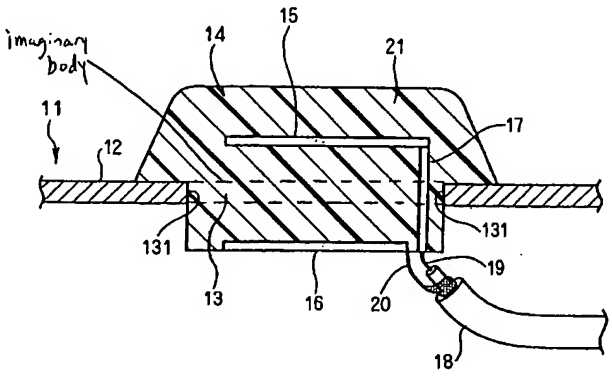

FIG. 1A

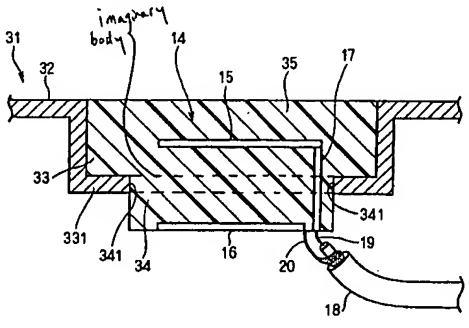

FIG. 3A

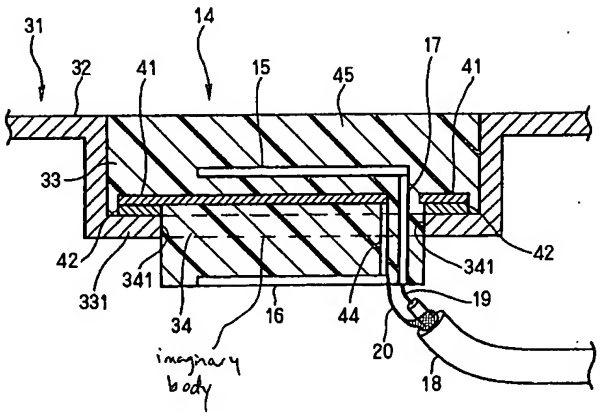

FIG. 5A

As explained in the application, the position of the antenna with respect to the vehicle body inhibits the directivity from shifting in the vertical direction, while improving the transmission gain in the vertical direction. (See page 8, lines 8 – 17; page 9, lines 8 – 18; page 10, lines 8 – 22; and page 12, lines 3 – 6.)

The Egashira '418 patent discloses an antenna with two conductive plates: a lower plate 10 and an upper plate 20. The lower plate 10 is used as a ground plate. The upper plate 20 is used as an antenna. The lower plate 10 is attached on a body 88 of an automobile. (Col. 2, ll. 56 – 67.) However, the Egashira '418 patent fails to disclose an antenna mounted to a vehicle body with a through hole, wherein the through hole defines an imaginary body that is disposed in the through hole and that is continuous with the vehicle body, wherein **the imaginary body is interposed between the radiating element and the ground plate** of the antenna. In each embodiment disclosed in the Egashira '418 patent, such as the embodiment shown in Figure 9 (reproduced below), the imaginary body that is disposed within the through hole and continuous with the vehicle body would be disposed **below** both the lower plate 10 and

the upper plate 20. This through would be **not** be interposed between the lower plate 10 and the upper plate 20.

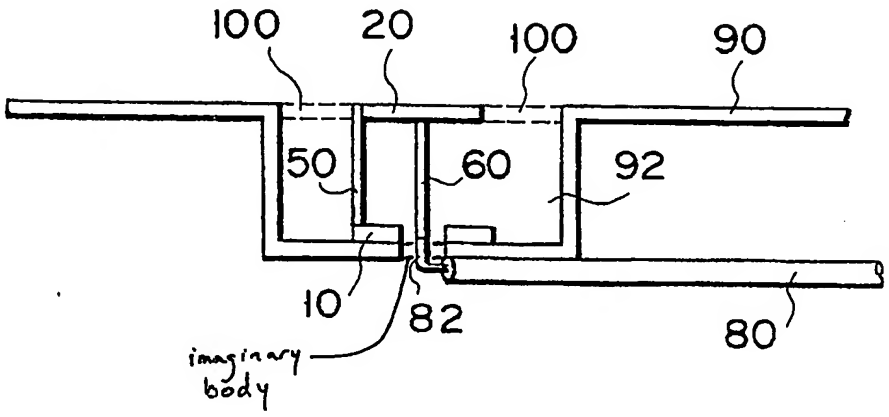

FIG. 9

In contrast, claim 1 of the present invention is an antenna apparatus mounted in a through hole defined by a vehicle body made of metal. The through hole defines **an imaginary body that is disposed within the through hole and that is continuous with the vehicle body**. The antenna apparatus includes a planar antenna having a radiating element and a ground plate. The radiating element is spaced in one direction from one surface of the vehicle body. The ground plate is spaced in an opposite direction from an opposite surface of the vehicle body such that the **imaginary body is interposed between the radiating element and the ground plate**.

Because the Egashira '418 patent fails to disclose an antenna mounted to a vehicle body with a through hole, wherein the through hole defines an imaginary body that is disposed in the through hole and that is continuous with the vehicle body, wherein the imaginary body is interposed between the radiating element and the ground plate of the antenna, Applicants respectfully submit that claim 1 is allowable over the rejection based on 35 U.S.C. § 102. Claims 2 through 6 are each ultimately dependent

upon claim 1 and add perfecting limitations. Accordingly, Applicants respectfully submit that claims 2 through 6 are also allowable over the rejection based on 35 U.S.C. § 102.

Furthermore, claim 7 claims a method for mounting a planar antenna on a vehicle. The planar antenna has a radiating element and a ground plate. The method includes the steps of boring a hole through a body of the vehicle. The hole defines an imaginary body disposed in the hole and continuous with the body of the vehicle. The method also includes locating the planar antenna in the through hole so that the **imaginary body is positioned between the radiating element and the ground plate**.

Because the Egashira '418 patent fails to disclose boring a hole through the body of the vehicle, wherein the hole defines an imaginary body disposed in the hole and continuous with the body of the vehicle, and locating the planar antenna so that the imaginary body is positioned between the radiating element and the ground plate, Applicants respectfully submit that claim 7 is allowable over the rejection based on 35 U.S.C. § 102.

Moreover, claim 8 claims an antenna apparatus mounted in a through hole defined by a metal attachment plate. The through hole defines an imaginary body disposed in the through hole and continuous with the metal attachment plate. The antenna apparatus includes a planar antenna having a radiating element and a ground plate. The radiating element is spaced in one direction from one surface of the metal attachment plate. The ground plate is spaced in an opposite direction from an opposite surface of the metal attachment plate such that the **imaginary body is interposed between the radiating element and the ground plate**. The metal attachment plate is integral with a vehicle body.

Because the Egashira '418 patent fails to disclose an antenna mounted to a metal plate with a through hole, wherein the through hole defines an imaginary body that is disposed in the through hole and that is continuous with the metal plate, wherein **the imaginary body is interposed between the radiating element and the ground plate** of the antenna, Applicants respectfully submit that claim 8 is allowable over the rejection based on 35 U.S.C. § 102.

Additionally, claim 10 claims an antenna apparatus mounted on a vehicle. The antenna apparatus includes a planar antenna having a radiating element and a ground plate. The antenna apparatus also includes a metal vehicular body defining a through hole which has an internal edge and an imaginary body that is disposed within the through hole. The imaginary body is continuous with the vehicular body. The **imaginary body is located between the radiating element and the ground plate**.

Because the Egashira '418 patent fails to disclose an antenna apparatus mounted to a vehicular body defining a through hole, wherein the through hole defines an imaginary body that is disposed in the through hole and that is continuous with the vehicular body, wherein the imaginary body is located between the radiating element and the ground plate, Applicants respectfully submit that claim 10 is allowable over the rejection based on 35 U.S.C. § 102.

In regard to claim 11, the Examiner explained in a November 8, 2005 telephone conference with the Applicants' representative that claim 11 is allowable over the prior art. Thus, Applicants respectfully submit that claim 11 is allowable over the rejection based on 35 U.S.C. § 102. Claims 12 and 13 have been added herein and are

dependent on claim 11. Thus, Applicants respectfully submit that claims 12 and 13 are allowable over the rejection based on 35 U.S.C. § 102.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: November 10, 2005

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